

CLAIMS

## 1. Piston vacuum pump, comprising

a cylinder (14) and a piston (12) forming a compression chamber (28) with the cylinder (14) and oscillating in the cylinder (14) with a compression stroke and an intake stroke,

a gas inlet (30) in a side wall (16) of the cylinder (14), the gas inlet (30) being closed by the piston (12) at the beginning of the intake stroke and open at the end of the intake stroke, and

an equalizing conduit with a valve, gas flowing from the gas inlet (30) through the equalizing conduit and the valve into the compression chamber (28) during the beginning of the intake stroke,

c h a r a c t e r i z e d i n

that the piston (12) forms the equalizing conduit and the valve.

## 2. Piston vacuum pump according to claim 1, characterized in that the equalizing conduit in the piston (12) is formed between a piston side wall opening (32) and a piston end wall opening (36), the piston end wall opening (36) and the gas inlet (30) being connected with each other at the beginning of the intake stroke.

## 3. Piston vacuum pump according to claim 1 or 2, characterized in that the valve is a non-return valve (40) blocking in the direction of the gas inlet (30) and opening in the direction of the compression chamber (28).

## 4. Piston vacuum pump according to claim 3, characterized in that the non-return valve (40) is arranged at the piston end wall (26).

5. Piston vacuum pump according to one of claims 1-4, characterized in that the gas inlet (30) has an annular groove (52,62) in the cylinder side wall (16) and/or in the piston side wall (24) allocated thereto.
6. Piston vacuum pump according to one of claims 1-5, characterized in that a storage chamber (34) is provided in the piston (12) in the course of the equalizing conduit.
7. Piston vacuum pump according to claim 1, characterized in that the equalizing conduit and the valve (72) are formed by a gap (72) between the piston side wall (73) and the cylinder side wall (75), the gap width ranging between 10 and 100  $\mu\text{m}$ .
8. Piston vacuum pump according to claim 1, characterized in that the equalizing conduit and the valve are formed by a substantially axial groove (82) in the piston side wall (84) or in the cylinder side wall.
9. Piston vacuum pump according to one of claims 1-8, characterized in that the valve is configured as a throttle.